WHAT IS CLAIMED IS:

1. A method of reducing interference within a local channel signal received during operation of a mobile station in at least one of an idle state and an access state, the method comprising:

selecting at least one interfering pilot channel signal that has a signal strength above a threshold, wherein the selected at least one interfering pilot channel signal comprises an interfering set of pilot channel signals; and

producing a corrected local channel signal based upon the interfering set of pilot channel signals during the at least one of the idle state and the access state.

2. A method according to Claim 1, wherein selecting at least one interfering pilot channel signal and producing a corrected local channel signal comprise repeatedly selecting at least one interfering pilot channel signal and repeatedly producing a corrected local channel, respectively, and wherein the method further comprises:

repeatedly comparing the selected interfering pilot channel signals to the threshold, and removing a selected interfering pilot channel signal from the interfering set of pilot channel signals when the signal strength of the respective selected interfering pilot channel signal decreases below the threshold.

3. A method according to Claim 1, wherein the local channel signal is received in a receiver including a rake receiver having at least a first finger assigned to the local channel signal and a second finger assigned to one of the interfering set of pilot channel signals, and wherein producing a corrected local channel signal comprises:

producing an interference signal based on a despreading sequence associated with the first finger, and a pilot channel pseudonoise (pn) sequence corresponding to the second finger, wherein producing the interference signal comprises correlating the despreading sequence with the pilot channel pn sequence;

producing a correction signal corresponding to the first finger based on the interference signal and a received pilot signal corresponding to the second finger; and

subtracting the correction signal from the local channel signal to produce a corrected local channel signal.

4. A method according to Claim 3, wherein producing a corrected local channel signal further comprises:

producing a second interference signal based on the despreading sequence associated with the first finger and a second pilot channel pn sequence corresponding to a third finger of the rake receiver, wherein the third finger is assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals; and

producing a second correction signal corresponding to the first finger based on the second interference signal and a received pilot signal corresponding to the third finger,

and wherein subtracting the correction signal further comprises subtracting the second correction signal from the local channel signal to produce the corrected local channel signal.

5. A method according to Claim 3, wherein the first finger and the second finger are two fingers of n fingers of the rake receiver, wherein each finger is assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals, wherein producing a corrected local channel signal further comprises:

producing n-1 interference signals corresponding to the first finger, each interference signal of the n-1 interference signals based on the despreading sequence associated with the first finger, and one of n-1 pilot channel pn sequences corresponding to the n fingers excluding the first finger; and

producing n-1 correction signals corresponding to the first finger, each correction signal based on each interference signal of the n-1 interference signals and a received pilot channel signal corresponding to one of n fingers other than the first finger,

and wherein subtracting the correction signal comprises subtracting the n-1 correction signals from the local channel signal to produce the corrected local channel signal.

6. A method according to Claim 5, wherein producing a corrected local channel signal further comprises:

producing a group of n-1 interference signals corresponding to each of the n fingers of the rake receiver other than the first finger that are assigned to the local channel signal;

producing a group of n-1 correction signals corresponding to each of the n fingers of the rake receiver other than the first finger that are assigned to the local channel signal; and

producing a corrected local channel signal for each of the n fingers other than the first finger that are assigned to the local channel signal, and wherein producing a corrected local signal for each of the n fingers other than the first finger comprises subtracting the group of n-1 correction signals from a corresponding local channel signal received by each of the n fingers other than the first finger.

7. A method according to Claim 3, wherein producing a corrected local channel signal further comprises:

interpolating a value of a pilot channel pseudonoise (pn) sequence corresponding to the second finger to produce a pilot channel pn sequence corresponding to the second finger; and

digitally filtering the pilot channel pn sequence with a digital filter, the digital filter having an impulse response in accordance with a function equal to the convolution of an input impulse response of an input filter to the receiver and an output impulse response of a transmitter filter of a transmitter transmitting the pilot channel signal of the interfering set of pilot channel signals.

8. A method according to Claim 7, wherein producing an interference signal comprises correlating the despreading sequence with the pilot channel pn sequence after the pilot channel pn sequence has been filtered in the digital filter.

9. A method according to Claim 8, wherein producing the correction signal comprises multiplying the interference signal with the received pilot signal corresponding to the second finger.

10. A method according to Claim 3, wherein producing a correction signal corresponding to the first finger comprises multiplying the interference signal and the received pilot signal.

11. A system for reducing interference within a local channel signal received during operation of the system in at least one of an idle state and an access state, the system comprising:

a controller capable of selecting at least one interfering pilot channel signal that has a signal strength above a threshold, wherein the selected at least one interfering pilot channel signal comprises an interfering set of pilot channel signals; and

a finger demodulator assembly capable of producing a corrected local channel signal based upon the interfering set of pilot channel signals during the at least one of the idle state and the access state.

12. A system according to Claim 11, wherein the controller is capable of repeatedly selecting at least one interfering pilot channel signal, wherein the finger demodulator assembly is capable of repeatedly producing a corrected local channel, respectively, and wherein the controller is further capable of repeatedly comparing the selected interfering pilot channel signals to the threshold such that the controller is capable of removing a selected interfering pilot channel signal from the interfering set of pilot channel signals when the signal strength of the respective selected interfering pilot channel signal decreases below the threshold.

13. A system according to Claim 11, wherein the finger demodulator assembly comprises:

a rake receiver comprising:

a first finger assigned to the local channel signal; and

a second finger assigned to one of the interfering set of pilot channel signals;

a cancellation element associated with the first finger, wherein the cancellation element is capable of producing an interference signal based on a despreading sequence

associated with the first finger, and a pilot channel pseudonoise (pn) sequence corresponding to the second finger, wherein the cancellation element is capable of producing the interference signal by correlating the despreading sequence with the pilot channel pn sequence, and wherein the cancellation element is capable of producing a correction signal corresponding to the first finger based on the interference signal and a received pilot signal corresponding to the second finger; and

a correction element associated with the first finger, wherein the correction element is capable of subtracting the correction signal from the local channel signal to produce a corrected local channel signal.

14. A system according to Claim 13, wherein the rake receiver further comprises:

a third finger assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals,

wherein the cancellation element is capable of producing a second interference signal based on the despreading sequence associated with the first finger and a second pilot channel pn sequence corresponding to the third finger, wherein the cancellation element is capable of producing a second correction signal corresponding to the first finger based on the second interference signal and a received pilot signal corresponding to the third finger,

and wherein the correction element is capable of producing the corrected local channel signal by further subtracting the second correction signal from the local channel signal.

15. A system according to Claim 13, wherein the rake receiver comprises n fingers including the first finger and the second finger, wherein each finger is assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals,

wherein the cancellation element is capable of producing n-1 interference signals corresponding to the first finger, each interference signal of the n-1 interference signals based on the despreading sequence associated with the first finger, and one of n-1 pilot

channel pn sequences corresponding to the n fingers excluding the first finger, wherein the cancellation element is also capable of producing n-1 correction signals corresponding to the first finger, each correction signal based on each interference signal of the n-1 interference signals and a received pilot channel signal corresponding to one of n fingers other than the first finger,

and wherein the correction element is capable of producing the corrected local channel signal by subtracting the n-1 correction signals from the local channel signal.

16. A system according to Claim 15, wherein the cancellation element comprises n cancellation elements, each cancellation element associated with one of the n fingers, wherein each cancellation element for each finger that is assigned to the local channel signal is capable of producing a group of n-1 interference signals corresponding to each of the n fingers of the rake receiver other than the finger associated with the respective cancellation element, wherein each cancellation element is also capable of producing a group of n-1 correction signals corresponding to each of the n fingers of the rake receiver other than the finger associated with the respective cancellation element,

wherein the correction element comprises n correction elements, each correction element associated with one of the n fingers, wherein each correction element for each finger that is assigned to the local channel signal is capable of producing a corrected local channel signal for each of the n fingers of the rake receiver other than the finger associated with the respective correction element, and wherein each correction element is capable of producing the corrected local channel signal by subtracting the group of n-1 correction signals from the local channel signal assigned to the finger associated with the respective correction element.

17. A system according to Claim 13, wherein the cancellation element further comprises a cancellation element associated with the second finger, wherein the cancellation element associated with the second finger is capable of interpolating a value of a pilot channel pseudonoise (pn) sequence corresponding to the second finger to produce a pilot channel pn sequence corresponding to the second finger, and wherein the cancellation element associated with the second finger includes a digital filter capable of

digitally filtering the pilot channel pn sequence, the digital filter having an impulse response in accordance with a function equal to the convolution of an input impulse response of an input filter to the receiver and an output impulse response of a transmitter filter of a transmitter transmitting the pilot channel signal of the interfering set of pilot channel signals.

18. A system according to Claim 17, wherein the cancellation element associated with the first finger is capable of producing an interference signal by correlating the despreading sequence with the pilot channel pn sequence after the pilot channel pn sequence has been filtered in the digital filter.

19. A system according to Claim 18, wherein the cancellation element associated with the first finger is capable of producing the correction signal by multiplying the interference signal with the received pilot signal corresponding to the second finger.

20. A system according to Claim 13, wherein the cancellation element is capable of producing a correction signal corresponding to the first finger by multiplying the interference signal and the received pilot signal.

21. A system for reducing interference within a local channel signal received during operation of the system in at least one of an idle state and an access state, the system comprising:

a controller capable of selecting at least one interfering pilot channel signal that has a signal strength above a threshold, wherein the selected at least one interfering pilot channel signal comprises an interfering set of pilot channel signals;

a rake receiver comprising:

a first finger assigned to the local channel signal; and

a second finger assigned to one of the interfering set of pilot channel signals; and

noise reduction element associated with the first finger, wherein the noise reduction element comprises:

a correlator adapted to correlate an interpolated pilot channel pseudonoise (pn) sequence corresponding to the second finger with a despreading sequence corresponding to the first finger to produce an interference signal;

a multiplier adapted to multiply the interference signal with a received pilot signal corresponding to the second finger to produce a correction signal; and

a subtractor adapted to subtract the correction signal from the local channel signal to produce a corrected local channel signal.

22. A system according to Claim 21, wherein the rake receiver further comprises:

a third finger assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals,

wherein the noise reduction element further comprises:

a second correlator adapted to correlate an interpolated pilot channel pn sequence corresponding to the third finger with the despreading sequence corresponding to the first finger to produce a second interference signal; and

a second multiplier adapted to multiply the second interference signal with a received pilot signal corresponding to the third finger to produce a second correction signal,

and wherein subtractor is adapted to further subtract the second correction signal from the local channel signal to produce a corrected local channel signal.

23. A system according to Claim 21, wherein the rake receiver comprises n fingers including the first finger and the second finger, wherein each finger is assigned to one of the local channel signal and a pilot channel signal from the interfering set of pilot channel signals,

wherein the noise reduction element comprises:

n-1 correlators, each correlator adapted to correlate one of n-1 pilot channel pn sequences corresponding to the n fingers excluding the first finger with the despreading

sequence corresponding to the first finger to produce one of n-1 interference signals corresponding to the first finger; and

n-1 multipliers, each multiplier adapted to multiply one of the n-1 interference signals and a received pilot channel signal corresponding to one of n fingers other than the first finger to produce n-1 correction signals,

and wherein the subtractor is adapted to subtract the n-1 correction signals from the local channel signal to produce a corrected local channel signal.

24. A system according to Claim 23, wherein the noise reduction element comprises n noise reduction elements, each noise reduction element associated with one of the n fingers of the rake receiver,

wherein each correlator of each noise reduction element associated with a finger assigned to the local channel signal is adapted to correlate one of n-1 pilot channel pn sequences corresponding to the n fingers other than the finger associated with the respective noise reduction element, with the despreading sequence corresponding to the finger associated with the noise reduction element including the respective correlator, to produce one of n-1 interference signals corresponding to the respective noise reduction element,

wherein each multiplier of each noise reduction element associated with a finger assigned to the local channel signal is adapted to multiply one of n-1 interference signals corresponding to the respective noise reduction element and a received pilot channel signal corresponding to one of n fingers other than the finger associated with the respective noise reduction element to produce one of n-1 correction signals corresponding to the respective noise reduction element,

and wherein each subtractor of each noise reduction element associated with a finger assigned to the local channel signal is adapted to subtract the n-1 correction signals corresponding to the respective noise reduction element from the local channel signal assigned to the finger associated with the respective noise reduction element to produce a corrected local channel signal.